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Adusumilli(10) **Pub. No.: US 2021/0275584 A1**(43) **Pub. Date: Sep. 9, 2021**(54) **IMMUNE CELL COMPOSITIONS AND METHODS OF USE FOR TREATING VIRAL AND OTHER INFECTIONS***C07K 14/71* (2006.01)*C12N 9/22* (2006.01)(52) **U.S. Cl.**CPC *A61K 35/17* (2013.01); *C07K 14/70521* (2013.01); *C07K 14/71* (2013.01); *C07K 2319/70* (2013.01); *C07K 2319/02* (2013.01); *C07K 2319/03* (2013.01); *C12N 9/22* (2013.01)(71) Applicant: **Memorial Sloan Kettering Cancer Center**, New York, NY (US)(72) Inventor: **Prasad S. Adusumilli**, New York, NY (US)(73) Assignee: **Memorial Sloan Kettering Cancer Center**, New York, NY (US)

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Disclosed herein are cells that are immune cells, which cells recombinantly express a dominant negative form of an inhibitor of a cell-mediated immune response of the immune cell, and optionally recombinantly express a chimeric antigen receptor (CAR), wherein the CAR binds to a viral antigen. In certain embodiments, the immune cell is an immunostimulatory cell, such as a T cell. In certain embodiments, the immune cell is an immunoinhibitory cell, such as a regulatory T cell. Also disclosed herein are immune cells that recognize and are sensitized to a viral antigen, which immune cells recombinantly express a dominant negative form of an inhibitor of a cell-mediated immune response of the immune cell. The cells can be sensitized to an antigen that is a viral antigen. Additionally provided are methods of using such cells to treat a viral infection in a subject in need thereof.

Specification includes a Sequence Listing.